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Inquiry into Energy Efficiency

Productivity Commission

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Without Prejudice

Please find enclosed my comment on the Productivity Commissions Draft report into Energy Efficiency.

The report has highlighted many of the deficiencies in energy rating schemes and State Government, as legislation should investigate the issues raised before introduction.

I premise the following comments by saying that all Australians should be encouraged to reduce their energy consumption and that ongoing assistance education and support by State and Federal Governments is important.

Any legislation should not prejudice the rights of minority groups or restrict the development of new or alternative concepts that may benefit our society.

This submission is specifically directed to comment on the proposed implementation of the 5 Star energy rating Scheme introduced in Victoria.

Any introduction of a flawed program as part of a government's policy to cover up shortfalls in its long term strategic planning breaches the rights of the individual.

The existing 5 Star Rating Program may be financially acceptable for implementation by investors and larger construction groups building mass housing or poorly orientated high-rise residential buildings.

The reality maybe seen as a poor token gesture towards greenhouse gas reduction if 5 star rated designs require a higher energy demand both during construction and the lifetime operation of the building.

Existing energy rating programs denies people the right to design and or construct a

dwelling of their choice that reflects their personal desire and commitment to reduce the impact their lifestyle has on the environment.

This is because there are many restrictions on the choice of design, selection of materials and method of construction of the homes and the difficulty and cost of obtaining exemptions for the use of traditional and alternative materials.

Impact on smaller Industry Groups

With the release of publicity from CSIRO article by Robin Clarke stating that Earth bricks had poor insulation (R Rating) the alternative building industry started to decline rapidly and has not recovered.

Within weeks of adverse publicity and after many years in promoting earth building as a sustainable environmental building material I witnessed our new inquiry level dropped from 30 or more per week to between 1 and 4 per month with a subsequent fall in sales of approx 83% in the following year. This was in contrast too our company's sales grow by 106%- 160% p.a, over the previous 6 to 8 years.

Because of confusion many councils made recommendations or decisions that caused many clients to give up on their desire to have a sustainable lifestyle and settled for the Brick Veneer model and all of its problems including the need for major expenditure for items such as floor heating, air conditioning etc and the associated cost for energy for those appliances.

The initial impact on architects builders and some other trades was minimal because they were able to pick up other clients. For people who believed and worked providing a wide range of services and goods for sustainable building projects it proved to be an ongoing financial disaster.

The problem was not that the report was incorrect. It was that it was not balanced and misleading by not highlighting the fact that earth walls have high thermal mass and perform in a different manner to insulated walls.

Earth also offers many other advantages that other products cannot. These include Low embodied energy, the ability to be simply recycled, natural humidity control, 50db sound reduction through a 250mm wall and no toxic chemical emissions.

The Nat HERS program and subsequently First Rate combined with incorrect assumptions then showed earth housing as a poor performer in the energy rating game.

During discussions with CSIRO staff a slight change in minimum acceptable temperature range to 19.5 degree C showed a jump from 2 Star to 4 Star rating on an earth house that was being assessed when the programs parameters were amended.

Note

Research is currently being carried out in Europe, America and Australia indicating that the human brain performs better at 19.5 Deg C than higher temperatures.

The emphasis on having a rating plan that could be seen as providing a simple answer to energy use by rating building components i.e. building fabric (walls) just for one specific performance characteristic falls short of designing for the reduced energy use in an occupied building.

Insulation is one factor in good design not the one answer

When limited field testing of existing housing stock was carried out not one alternative earth building was considered.

Also assumptions that the energy to raise an earth house to desired minimum temperature or cool it was not in line with the actual experience of thousands of owners of earth housing.

Tony Isaacs (ex SEAV) stated at a recent public forum organised by The Nillumbik Shire that they now realise a 2 Star rated Earth House out performs a 5 Star rated house in summer.

The performance of earth houses in several other climatic zones than Melbourne is recognised.

There have been several suggested options such as cavity earth walls the use of insulation and other's but these need to be compared with conventional earth construction before being considered.

Ratios of North facing windows to floor and wall areas of high thermal mass also need to be tested in field trials against computer modelling.

People designing building and owning alternative houses usually oriented correctly and have eaves line designed to let in winter sun and keep out Summer sun

Few sustainable houses have the need for high-energy requirements for heating and cooling but there is no offset within the rating schemes as a credit

Many people do not enjoy the higher temperature ranges that are used in rating schemes

Indoor air quality and low chemical emissions when combined with sustainable building products are believed to have major health benefits for the occupants and reduced impact on health budgets.

In Europe research is reported to be showing that sealing up buildings and the use

of aluminium foil insulation can have harmful effects on occupants because electromagnetic fields emitted by appliances are contained.

Earth renders and earth walls are seen as a means to reduce the levels of electromagnetic fields.

Further reports from Europe have recently indicated that the firing of clays during fired brick production actually releases Greenhouse gases that are locked up in the unfired clays.

Good design including provision for natural cross flow ventilation and sound energy management practices may be shown to be far more relevant to reduced energy use and greenhouse gas reduction than a mandatory program that can increase costs, is difficult to police and does not get to the core of the problem.

Despite the replies to many issues raised by the supporters of the ratings programs in response to Dr Williamson's comments (pages 145-146) the reality is that -

- Rating programs have been introduced without adequate real time comparative testing.
- Ratings have minimum relevance to the actual energy consumption of a building
- Education and awareness programs on energy use have been expensive and could be seen to be misleading and ineffective in some areas.
- Modern appliances are reported to account for 11.6% of domestic energy use (page D13)
- There is apparently no computer assimilation program used that has provision for accurately rating a free running house
- All programs are based on houses having central heating and cooling
- Proposed rating programs relating to wall fabric for domestic and industrial buildings needs to be reconsidered.
- Embodied energy should be considered in any proposed rating scheme.

If Victoria had introduced a more holistic energy rating program that was perhaps 20 stars with say a minimum rating requirement of say 10 Star (i.e. something like BASIC) combined with a revision of energy costs and introduction of new technology for power generation and an education program then a realistic reduction of greenhouse gases could be achieved

Introduction of flawed energy rating programs will have an ongoing detrimental impact on the economic viability, quality of living, air quality and health of Australians.

Summary

The Victorian Government appears to have targeted the rights of many homeowners to have choice in the design, selection of materials and use of alternative construction methods together with their right to choose a lifestyle that enables them to reduce their impact on the environment.

This has been achieved by selective release of information to the public using other organizations CSIRO SEAV Building commission and notable persons to promote only part of the information that supports their claim to good governance of Victoria in the hope that this will lead to ongoing party political appointment.

Present political direction includes the drive to boost Melbourne's population growth to levels that exceed the capacity of Victoria's existing infrastructure to provide for increased water, energy, transport and other services to cope.

Figures quoted indicate that as a result of brown coal being used as the primary energy source in Victoria in older power stations that have not been upgraded to use current technology contribute considerable to Victoria's 60% contribution of Australia's Greenhouse gases

Using Victoria's brown coal approximately 1.813 Kw. of energy is required to be produced 1 Kw. of energy for the end user this equates to approx 2 Kg of emissions for each Kw. of energy supplied

To reduce emissions at the source of transmission would require considerable capital investment in new technology. With price capping on electricity costs and the Government's awareness that a steep hike in power costs could lead to the loss of some industries to states generating electricity from black coal would not be popular politically.

In failing to take strategic steps to reduce emissions and control development and growth they have spent considerable amounts of taxpayers money to apply economic pressure and discriminate against the average Victorian.

Low energy cost does not encourage new investment or even co Generation projects nor does it encourage rational use by consumers.

The introduction of the 5 Star energy rating program as a mandatory regulatory program instead of a design tool to be used in assisting the reduction of energy consumption and greenhouse gases needs to be reviewed.

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